Overview of the activities of the study group ISO/IEC JTC1/SC38/SG1 about “Cloud Computing”

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Agence pour la Normalisation et l’Economie de la Connaissance
Summary

• Presentation of ISO/IEC JTC1/SC38 and the Study Group on Cloud Computing

• Study Group Report on Cloud Computing

• Next steps and work in progress in other SCs
Summary

- Presentation of ISO/IEC JTC1/SC38 and the Study Group on Cloud Computing
- Study Group Report on Cloud Computing
- Next steps and work in progress in other SCs
ISO, JTC, TC and SC

IEC

ISO

JTC1

TC 1  TC 2  TC 263
Screw threads  Fasteners  Coalbed methane (CBM)

JTC1/SC 2  JTC1/SC 3  ...  JTC1/SC 38
Coded character sets  Telecommunications and information exchange between systems  Distributed application platforms and services (DAPS)

18 SC  220 TC
ISO/IEC JTC1/SC38 statement of scope

- **Title**: Distributed Application Platforms and Services (DAPS)

- **Scope**: Standardization for interoperable Distributed Application Platforms and Services including:
  - WG1: Web Services,
  - WG2: Service Oriented Architecture (SOA), and
  - SG1: Cloud Computing

- **Members**: 17 P-Members and 13 O-Members

- **Luxembourg is O-Member since January 2011**
Study Group on Cloud Computing (SGCC) history

- **September 2009**: Report of JTC 1/SWG-P on possible future work on Cloud Computing in JTC 1
  - JTC 1 Special Working Group on Planning

- **November 2009**: SC38 creation
  - Dr. Donald Deutsch (Oracle – USA) = SC 38 Chairman

- **May 2010**: First plenary meeting of JTC 1/SC 38, Beijing, China

- **September 2010**: SC 38 Study Group on Cloud Computing (SGCC) Meeting, New York, NY (JTC 1/SC 38 Plenary and Subgroup Meeting)

- **April 2011**: JTC1/SC 38 plenary & WGs meetings, Paris, France

- **September 2011**: JTC1/SC 38 plenary & WGs meetings, Seoul, Korea
**SGCC business plan**

- At the September 2010 meeting, SC 38 approved SGCC’s recommendation to create Editorial and Work Teams to develop the general **SGCC report and standards analysis report**, respectively.

- The focus for the next year is to develop:
  - [...]
  - **Comprehensive report on Cloud Computing activities and opportunities for standardization**; this report will include both the Study Group Report and the Standards Analysis Report.

- **Identified risk:** SGCC must stay out ahead of the tsunami of interest in Cloud Computing by completing its report(s) and proposing concrete standards setting activities for SC 38 consideration.

- **Identified opportunities:** SC 38 is well positioned to be:
  - [...]
  - The leading standardization forum for Cloud Computing.
Most active countries in the SGCC (recent analysis)

<table>
<thead>
<tr>
<th>Asia</th>
<th>North America</th>
<th>Europe</th>
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<tbody>
<tr>
<td>• Korea</td>
<td>• USA</td>
<td>• Sweden</td>
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<td>• China</td>
<td>• Canada</td>
<td>• Finland</td>
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<td>• Japan</td>
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<td>• Ireland</td>
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</table>

Luxembourg is O-member from January 2011

- JTC1/SC38 approves the following officers for a 1-year term of office, effective immediately:
  - Seungyun Lee (KR) Convenor, Study Group on Cloud Computing
  - Zhou Ping (CN) Secretary, Study Group on Cloud Computing
Summary

• Presentation of ISO/IEC JTC1/SC38 and the Study Group on Cloud Computing

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Study Group Report on Cloud Computing

• First draft: 14 January 2011
• Editor: ISO/IEC JTC 1 SC38 SGCC
• Second draft: 16 May 2011
• Final version: 30 September 2011
The main purpose of this document is to **identify the future work of SC38 in the area of Cloud Computing**, and to **provide a basis for SC38 working with other relevant JTC1 subcommittees and with groups in other SDOs**.

Two detailed objectives:

1. The report clarifies briefly **what is meant by Cloud Computing** for its purposes.

2. The report surveys the **current state of standards** relevant for Cloud Computing and identifies what exists, both in terms of bodies and in terms of standards; and identifies any apparent major deficiencies and issues.
Cloud Computing definition

- Cloud Computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable resources (e.g. networks, servers and storage systems), applications and services that can be rapidly provisioned and released with minimal management effort or service provider interaction. This Cloud model promotes confidentiality, integrity and availability and is composed of six essential characteristics, three service models, and four deployment models.

- Mainly inspired from NIST definition of Cloud Computing (SP 800-145 (Draft))

- This definition has evolved in the different versions of the document and may still evolve in the coming standards
Cloud Computing definition

Essential characteristics

• On-demand self-service
• Broad network access
• Multi-tenancy
• Resource pooling
• Rapid elasticity
• Measured Service

Deployment models

• Private Cloud
• Community Cloud
• Public Cloud
• Hybrid Cloud

Service models

• Software as a Service (SaaS)
• Platform as a Service (PaaS)
• Infrastructure as a Service (IaaS)
Summary of Cloud Computing industry initiatives

<table>
<thead>
<tr>
<th>Industry Initiative</th>
<th>Area of Interest</th>
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</thead>
<tbody>
<tr>
<td>ITU-T Focus Group on Cloud Computing</td>
<td>International standard organization</td>
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<tr>
<td>ISO/IEC JTC 1/SC 7</td>
<td>International standard organization</td>
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<tr>
<td>ISO/IEC JTC 1/SC 27</td>
<td>International standard organization</td>
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<tr>
<td>European Network and Information Security Agency (ENISA)</td>
<td>EU agency</td>
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<tr>
<td>ETSI Technical Committee (TC) CLOUD</td>
<td>European standard organization</td>
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<tr>
<td>CESI (China Electronics Standardization Institute)</td>
<td>Chinese standard organization</td>
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<td>CCF (Cloud Computing Forum in Korea)</td>
<td>Korean industry consortium</td>
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<td>KCSA (Korea Cloud Service Association)</td>
<td>Korean industry consortium</td>
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<tr>
<td>Japan Cloud Consortium</td>
<td>Japanese industry consortium</td>
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<tr>
<td>Open Grid Forum (OGF)</td>
<td>Industry consortium</td>
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<tr>
<td>Distributed Management Task Force (DMTF)</td>
<td>Industry consortium</td>
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<tr>
<td>Cloud Security Alliance (CSA)</td>
<td>Industry consortium</td>
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<td>OASIS</td>
<td>Industry consortium</td>
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<td>Object Management Group (OMG)</td>
<td>Industry consortium</td>
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<td>Storage Networking Industry Association (SNIA)</td>
<td>Industry consortium</td>
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<tr>
<td>Cloud Computing Use Case Discussion Group</td>
<td>Ad Hoc</td>
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<tr>
<td>The Open Group</td>
<td>Industry consortium</td>
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<tr>
<td>Institute of Electrical and Electronic Engineers Standards Association (IEEE-SA)</td>
<td>Standards Development Organization</td>
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<tr>
<td>ATIS Cloud Services Forum</td>
<td>Industry consortium</td>
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<tr>
<td>TeleManagement Forum</td>
<td>Industry consortium</td>
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<tr>
<td>Cloud Industry Forum (CIF)</td>
<td>Industry consortium</td>
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<td>OSGi Alliance</td>
<td>Industry consortium</td>
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Cloud Computing standardization areas proposal

<table>
<thead>
<tr>
<th>High-level</th>
<th>Low-level</th>
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<tbody>
<tr>
<td>General &amp; fundamental</td>
<td>Identity</td>
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<tr>
<td>Interoperability &amp; Portability</td>
<td>Infrastructure API</td>
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<tr>
<td>Management</td>
<td>Platform API</td>
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<tr>
<td>Security</td>
<td>Data API</td>
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<td>Testing</td>
<td>Data Security</td>
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<td>Privacy</td>
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<td>Environment</td>
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<td>QoS</td>
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<td></td>
<td>Management</td>
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<td></td>
<td>Transport</td>
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Until now there is no global agreement on Cloud Computing Standardization areas in SC38 SGCC
Summary

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- Study Group Report on Cloud Computing
- Next steps and work in progress in other SCs
New Work Item Proposal (NWIP) - Vocabulary

• **Title:** Specification of Data Value Domain Distributed Application Platforms and Services - *Cloud Computing – Vocabulary*

• **Scope:** This International Standard provides an overview of Cloud Computing along with a *set of terms and definitions*. It is a *terminology foundation* for the cloud computing standardization work.

• **Justification:** The origins of Cloud Computing have led to *widespread confusion about terms, their definitions, and acronyms*. This impedes efforts to standardize Cloud Computing because each specification provides its own definitions, often obscuring the terminology similarities and differences across specifications.
**New Work Item Proposal (NWIP) – Reference Architecture**

- **Title:** Specification of Data Value Domain Distributed Application Platforms and Services - **Cloud Computing – Reference Architecture**

- **Scope:** This International Standard provides an overview of the general concepts and characteristics of Cloud Computing, Cloud Computing types, the components of Cloud Computing, and Cloud Computing actors and the relationships between these elements.

- **Justification:** An international standard reference architecture is required which identifies the various **Cloud models, the actors involved, and architectural components**. [...] The reference architecture should also align with those terms and definitions that are developed in SC38 for Cloud Computing Vocabulary.

**NEW WORK ITEM PROPOSAL**

<table>
<thead>
<tr>
<th>Date of presentation</th>
<th>Reference number (to be given by the Secretariat)</th>
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<tbody>
<tr>
<td>17/10/2011</td>
<td>ISO/IEC / SC N</td>
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**Study Period on Cloud Computing in other SCs**

- Cloud Computing is a multifaceted topic, concerning other SCs in ISO/IEC JTC1

- **ISO/IEC JTC1/SC7 – Software and systems engineering**
  - Study period report on “Possibility of Additional Standards in the Area of Cloud Computing”
  - Recommends 7 NWIPs

- **ISO/IEC JTC1/SC27 – IT Security techniques**
  - Study period report on “Cloud computing security and privacy”
  - Recommends a NWIP process for a Cloud Computing Security and Privacy Management System
**Evolution of the SGCC and its activities**

- SGCC recommends that SC 38 approve the Study Group Report on Cloud Computing, share with liaison organizations, and make publicly available if possible.

- SGCC considers that the two NWIPs if approved would be best addressed in a **new Working Group in SC38**.

- If the new Working Group is approved, the first Working Group meeting will be held **13–17 February 2012 in Vancouver, Canada**.
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